SCons File Organization

SCons Machinery

A container like ScienceTools includes several files in addition to regular user source. They replace IExternal and subdirectories, the *Policy packages, and CMT requirements.

These files reside in several places and may have package-specific 🎁 , container-specific 📦 ,

or global scope 🌍 .

The master copies of global files are in CVS under SConsFiles. They show up in all containers by means of symbolic links.

Externals

Three files are used to set up externals:

allExternals.scons: Will describe all versions of all externals used any container (so far just ST) on any platform. Involves symbols.

http://www-glast.stanford.edu/cgi-bin/viewcvs/SConsFiles/allExternals.scons?revision=1.38&view=markup

processExternals.scons: Makes substitutions for symbols based on current environment. Does extra set-up for certain externals.

externals.scons: Choose the particular (i)version of each external required for this container.

http://www-glast.stanford.edu/cgi-bin/viewcvs/ScienceTools-scons/externals.scons?revision=1.58&view=markup

SCons files

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Tools

- **addLibrary.py**: add dependency on library or collection of libraries

- **doxygen.py**: build doxygen config file

- **generateScript.py**: build wrapper scripts for exe's and generic _setup. See also setupTarget.scons.

- **registerObjects.py**: keeps track of what should be installed where; aliases

- **registerTargets.py**: replacement for registerObjects. Additionally has access to build environments for targets, needed to make project files on Windows

- **makeStudio.py**: makes project and solution files by calling builders defined in msvs.py. Invoked from registerTargets but only on Windows.

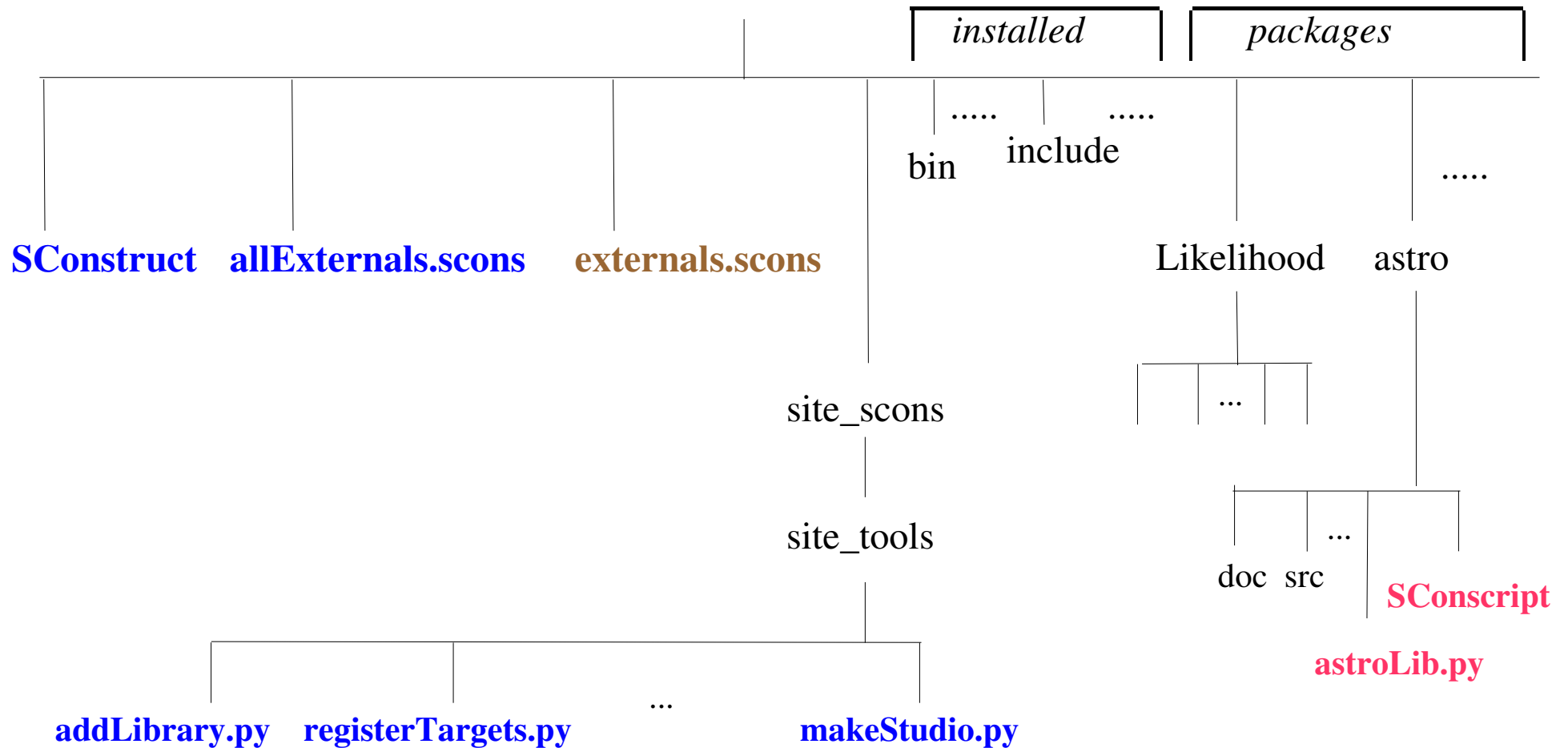- **msvs.py**: replacement for SCons-native tool of the same name.

Miscellany

- **SConstruct** 🌐 Bulk of SCons options definition and interpretration, generic (non-container-specific) set up.

- **package.scons** 📦 Defines, etc., used throughout this container.

- **setupTarget.scons** 🌐 Asks for build of _setup target (see also generateScript.py)

Per-package files

- **SConscript** Defines targets (libraries and executables) to be built for this package, then invokes registerTargets

- *xxx***Lib.py** Needed for any package that builds a library which will be referenced at link time by other binaries in this package or another package. Defines dependencies of the library on other libraries.

ScienceTools-someVersion

SConstruct   **allExternals.scons**   externals.scons

installed   *packages*

....
bin   include
.....

Likelihood   astro

site_scons

...

site_tools

doc src   ...

SConscript

astroLib.py

addLibrary.py   registerTargets.py   ...   makeStudio.py

Windows only

- Requires SCons 1.2.0.d20090223

- Check out recent ST version via GoGui or from command line, e.g.

  - cvs co -d *myFolder* -r ScienceTools-LATEST-1-2800 ScienceTools-scons

- From top directory issue CVS commands

  - `cvs update –A –l`   (update local files)

  - `cvs update -A site_scons/site_tools`

- Add msvs.py, makeStudio.py to your site_scons/site_tools folder. They're in CVS module users/jrb/minimalDev/site_scons/site_tools

- Edit site_scons/site_tools/registerTargets.py to enable call to makeStudio:

  - uncomment line near top: `from makeStudion import *`

  - uncomment multi-line call to makeStudio at the bottom

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